

REMARKS

In the aforementioned claim amendments, claims 1-4 are amended and claim 5 added. Now pending in the application are claims 1-5, of which claims 1 and 4 are independent. The following comments address all stated grounds for rejection and place the presently pending claims, as identified above, in condition for allowance.

Claim amendments

Claims 1-4 are amended to clarify the scope of the claimed invention. In particular, claim 1 is amended to recite that each of the nodes has *a low pass filter* connected to the transmission lines, and *two terminating resistors* respectively terminating the transmission lines via the low pass filter. Claim 4 is amended to recite *two bias circuits* and *two clip circuits*. Support for the claim amendments could be found in Fig. 7 and corresponding description at pages 8-10. No new matter is added by this amendment and no new issues are raised. Applicants contend that the pending claims, as amended, are patentable and in condition for allowance.

Claim Rejections under 35 U.S.C. § 102

Claim 1 and 2 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,115,831 of Hanf et al. (hereinafter "Hanf"). Applicants respectfully traverse this rejection in light of the above amendments and the following remarks, and request the reconsideration and withdrawal of the rejection under 35 U.S.C. § 102 (e) for the following reasons.

Claim 1 recites a communication system utilizing two-wire type transmission lines for transmitting a transmission signal represented by two AC components being opposite in phase and appearing. The communication system comprises a plurality of nodes respectively connected to the two-wire type transmission lines. Each of the nodes has *a low pass filter* connected to the transmission lines, and *two terminating resistors* respectively terminating the transmission lines via the low pass filter.

Hanf discloses a microcontrolled device with a bus protocol function for communicating with other microcontrolled control units via a Controller Area Network (CAN) by way of a two-wire bus. Hanf discloses a bus fault tolerant function that a bus fault recognition and response device disconnects the bus from its normal connections and alters its termination characteristics when a fault is detected.

Applicants respectfully submit that Hanf fails to disclose each and every essential elements of the claimed invention. Applicants submit that Hanf fails to disclose each of the nodes has *a low pass filter* connected to the transmission lines, and *two terminating resistors* respectively terminating the transmission lines via the low pass filter, as recited in claim 1. Hanf disclose terminating resistors 16 and 17 which are directly connected to the transmission lines CH_H and CH_L. However, Hanf does not disclose such an arrangement to connect the terminating resistors by way of a low pass filter.

With the arrangement of the claimed invention that includes a low pass filter and terminating resistors disposed downstream of the filter, the potentials appearing across the terminating resistor are not affected by the noises that might appear on the transmission lines because the noises are blocked by the filter. Therefore, the signal line potentials, such as the clip potentials, bias potentials, etc., within the node are stable notwithstanding the noises appearing on the transmission lines. Hanf does not disclose the arrangement of the claimed invention that blocks the influence of the noises appearing in the transmission lines on the potentials across the terminating resistors.

In light of the claim amendments and aforementioned arguments, Applicants submit that Hanf fails to disclose each and every essential elements of the claimed invention. Applicants therefore submit that claims 1 and 2 are in condition for allowance.

Claim Rejections under 35 U.S.C. §103

Claim 3 and 4 are rejected under 35 U.S.C. §103(a) as being unpatentable over Applicant Admitted Prior Art (hereinafter “APAA”) in view of Hanf. Applicants respectfully traverse this rejection in light of the above amendments and the following remarks, and request the reconsideration and withdrawal of the rejection under 35 U.S.C. §103(a) for the following reasons.

Rejection of Claim 3

Applicants note that claim 3 depends on claim 1 and respectfully submit that APAA and Hanf fail to teach or suggest that each of the nodes has a low pass filter connected to the transmission lines, and two terminating resistors respectively terminating the transmission lines via the low pass filter, as recited in claim 1. Claim 3, which depends on claim 1, is not rendered obvious over APAA and Hanf. Applicants therefore submit that claim 3 is in condition for allowance.

Rejection of Claim 4

Claim 4 recites a reception circuit for receiving a transmission signal represented by two AC components being opposite in phase and appearing in a communication system utilizing two-wire type transmission lines. The reception circuit comprises *two bias circuits* being independent from each other and each for applying a bias voltage to each of the AC components extracted by said AC coupling circuit. The reception circuit also comprises *two clip circuits* being independent from each other and each for clipping the level of each of the biased AC components at levels between a potential and a ground level.

Applicants respectfully submit that APAA and Hanf fail to teach or suggest all of the claim limitations of the claimed invention. Applicants submit that APAA and Hanf fail to teach or suggest *two clip circuits* being independent from each other and each for clipping the level of each of the biased AC components at levels between a potential and a ground level, as recited in claim 4. APAA does not teach or suggest clip circuits. Hanf simply discloses a differential amplifier (19) in Fig. 1. The differential amplifier, however, does not teach or suggest *two clip circuits* being independent from each other

and each for clipping the level of each of the biased AC components at levels between a potential and a ground level.

Furthermore, the bias circuit and clip circuit provided in the in the claimed invention operate in pairs for each of the transmission lines. With the arrangement of the claimed invention, although a failure, such as a line disconnection, occurs within one of the transmission lines, the other transmission line is not affected by the failure and signal transmission can be continued without reduction of transmission speed. Applicants note that APAA and Hanf do not teach or suggest the bias circuit and clip circuit that operate in pairs for a transmission line.

In light of the claim amendment and aforementioned argument, Applicants submit that APAA and Hanf fail to APAA and Hanf fail to teach or suggest all of the claim limitations of the claimed invention. Applicants therefore submit that claim 4 is in condition for allowance.

New Claim

Claim 5, which depends on claim 4, adds limitations to each of the clip circuit recited in claim 4. Support for claim 5 could be found in Fig 11. Based on the arguments set forth above, Applicants submit that new claim 5 is patentable and in condition for allowance.

CONCLUSION

For the foregoing reasons, Applicants contend that Claims 1-5 define over the cited art. If there are any remaining issues, an opportunity for an interview is requested prior to the issuance of another Office Action. If the above amendments are not deemed to place this case in condition for allowance, the Examiner is urged to call Applicants' representative at the telephone number listed below.

Respectfully submitted,
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